Session	Glass Chemistry and Structure
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Chair	EBRU MENŞUR ALKOY

SILICATES GLASSES ACTIVATED RRE-IONS AS A PROMISING MATERIAL FOR LUMINESCENCE APPLICATIONS

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Among a variety of inorganic luminescence materials, silicates are prospective to construct new phosphors. They find numerous applications as luminescent materials in a crystalline phase. However, in a glass and glass-ceramics form, silicates possess several advantages. Unlike single crystals, glasses can be obtained in a wide range of compositions, which in turn can correspond to stoichiometric crystalline compounds. Besides, glasses are environmental friendliness, low production cost, mechanical resistance, the relative ease of obtaining large volumes of samples and fibers, as well as the ease of molding and processing of final products. The samples of the silicate glasses and glass-ceramics based on stoichiometric compounds with the composition ((M2O)MO-2SiO2, where M= Li, Ca, Sr, Ba) and doped with different combinations RRE-ions were obtained in present work. Synthesis conditions (glass transition temperature), crystallization ability and luminescence properties of obtained glasses depend on the composition. It was established their potential application as wavelength shifters for transforming the UV light into eye visible and as perspective light converters for white light LEDs. Moreover, it was shown to obtaining glass fibers from these materials that allow more effective applications in optoelectronics with complex geometries.

Keywords: *glass, glass ceramics, luminescence*